

MINUTES
CHIEF OF ENGINEERS' ENVIRONMENTAL ADVISORY BOARD MEETING
Rock Island, IL
11 April 2002

1. The Chief of Engineers, LTG Robert Flowers, called the Environmental Advisory Board (EAB) meeting to order at 0807 hours, 11 April 2002. The following EAB members were present:

- Dr. Theodore Hullar
- Ms. Virginia Wetherell
- Dr. Michael J. Donahue

Also present were retired Board chairman Dr. Jonathan W. Bulkley; MG Robert Griffin, Director of Civil Works; Dr. Jim Johnson, Chief, Civil Works Planning and Policy Division; Ms. Patricia Rivers, Chief, Military Programs Environmental Division, and Ms. Ellen Cummings, EAB Executive Secretary.

2. **WELCOMING REMARKS:**

COL William Bayles, Rock Island District Commander, welcomed the EAB to his District, noting the importance of the Upper Mississippi River as a waterway and an ecosystem. He pointed out that the Upper Mississippi River and Illinois Waterway Navigation Study (UMR-IWS) is the most complex study undertaken by the Corps, and includes an examination of the system's ecology as well as its navigation features. The Upper Mississippi River System Environmental Management Program, meanwhile, is a partnership of Federal, State and local agencies striving for environmental sustainability through a number of projects in a five state region.

LTG Flowers reported that LTG Frederick Clarke, Chief of Engineers from 1969 to 1973, died in February 2002. LTG Clarke was Chief of Engineers when the National Environmental Policy Act was enacted, and, realizing he would need outside advice on how best to implement the requirements of the Act, founded the EAB in 1970. Over the years, the Board has provided invaluable insights that have helped the Corps meet its environmental responsibilities, develop an enlarged environmental restoration mission, and establish communication with the environmental community.

3. Two Board members, Ms. Wetherell and Dr. Donahue, were sworn in.
4. **Dr. Bulkley** was presented the Commander's Award for Public Service for his service on the EAB from 11 January 1995 to 29 March 1999 – “looking beyond the challenges of today.” The Corps of Engineers is now considering use of several concepts recommended by Dr. Bulkley, such as multi-objective planning. Dr. Bulkley was also cited for making the EAB an instrument for conflict resolution.

5. **ENVIRONMENTAL OPERATING PRINCIPLES:**

Ms. Rivers gave a presentation on the Environmental Operating Principles announced by the Chief of Engineers on 26 March 2002 and applicable to all Corps of Engineers activities. They are:

1. Strive to achieve environmental sustainability, an environment maintained in a healthy, diverse and sustainable condition being necessary to support life.
2. Recognize the interdependence of life and the physical environment, proactively considering environmental consequences of Corps programs and acting accordingly in all appropriate circumstances.
3. Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.
4. Continue to accept corporate responsibility and accountability under the law for activities and decisions under our control that impact human health and welfare and the continued viability of natural systems.

5. Seek ways and means to assess and mitigate cumulative impacts to the environment, bringing systems approaches to the full cycle of our processes and work.
6. Build and share an integrated scientific, economic and social knowledge base that supports a greater understanding of the environment and impacts of our work.
7. Respect the views of individuals and groups interested on Corps activities, listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the Nation's problems that also protect and enhance the environment.

She pointed out that these Principles arose from a challenge posed by the Chief of Engineers last year to develop principles broad enough to encompass all Corps of Engineers programs and functions. The Principles are founded in NEPA and other environmental laws, the Army Environmental Campaign Plan and the USACE Campaign Plan. The EAB serves a vital role in the "Process" portion of the USACE Campaign Plan.

LTG Flowers said the Corps is looking at establishing metrics for the Principles.

Dr. Hullar picked up a point from Ms. Rivers' presentation, noting that the principles are being applied at projects from sustainable housing at Fort Lee, VA to the Aransas Wildlife Refuge, TX. The former received an "EPA Energy Star," a good metric.

LTG Flowers noted that, in its military programs, the Corps has a Sustainable Project Rating Tool (SPiRiT) to evaluate sustainable projects.

Ms. Wetherell noted that the EAB had input into the Principles, which are similar to a set put together for the State of Florida, in consultation with Harvard University, in the mid-1990s. Metrics played a key role in the success of the Florida principles by allowing environmental officials to be accountable to the people providing their funds. Use of environmental metrics helped the State turn the corner on negative publicity and shift funds to problem areas. She suggested that the Construction Engineering Research Laboratory (CERL) showed the Board some excellent possible metrics.

Dr. Donahue recalled that, a decade ago, "sustainability" was just a concept. The Principles embody this concept that economic development and environmental protection can go hand in hand. He suggested taking each of the seven Principles and applying measurable tasks to them. Principles #6 and #7, building and sharing a knowledge base and communicating with individuals and groups, he said, are especially important. The "court of public opinion" shouldn't be a metric, he said, but public involvement can be.

Dr. Hullar noted that the Worldwide Web is used a great deal by young people. He suggested the Corps get its Principles, metrics and examples – with pictures and references – on the Web to show its leadership. Providing access to information is always a major task, but this should be easy.

LTG Flowers said the Corps also showed its leadership by vetting the Principles with other agencies.

6. REVIEW OF CERL BRIEFING

Ms. Rivers reported on CERL efforts to introduce the sustainability concept into military installations from the planning process through design. CERL is looking at what installations should be in the future – a process related to the watershed planning being introduced in Civil Works.

A major issue in installation planning is balancing the need for sufficient space for realistic training with the needs of communities around the installations.

The Corps has recently instituted the use of SPiRiT for evaluating sustainable design on Army and Air Force installations, with design work earning grades from "bronze" (meets minimum requirements) through "platinum." Among the sustainable concepts CERL has introduced are earthquake-proof structures and ethylene glycol cooling systems that reduce energy needs.

LTG Flowers asked the Board if they thought their visit to CERL on 9 April 2002 was worthwhile.

Ms. Wetherell said tools presented there could be adopted by the private sector, and their use could serve as a good metric. The other members agreed.

Dr. Donahue noted that urban planning is a major part of the process at CERL, and he would like the facility to be better known.

LTG Flowers pointed out that the Corps does research not normally done by the private sector, but when things the Corps develops have applicability, it makes them available. For the past year and a half, the Corps has invited members of the private sector to its labs. He noted that The Infrastructure Security Partnership (TISP), an “association of associations” founded six months after the Sep. 11, 2001 attack, is looking at ways to protect the built environment, and looking to the Corps labs to support its efforts.

Ms. Rivers recalled that Board members had asked about the labs’ relationship with universities. The Corps leverages its R&D capabilities by contracting with them. **Dr. Hullar** noted that the University of Illinois has a major technology transfer program, and suggested that CERL, also located in Champaign, IL, form a partnership with that institution for technology transfer. He suggested the Corps and the universities use the Web to disseminate their ideas.

Ms. Wetherell suggested using the Environmental Council of the States (ECOS) to present concepts. Most States are looking at sustainability and would like to use Corps tools.

LTG Flowers asked if it would be helpful to invite ECOS to have a future meeting near a lab. **Ms. Wetherell** responded, “absolutely.” **Dr. Hullar** agreed, “no use having a treasure and keeping it hidden.”

Dr. Donahue asked how the labs stand in terms of budget. **LTG Flowers** responded that the labs are funded on a reimbursable basis – whenever someone asks for research, they fund it. CERL, he said, is mostly military-funded; other labs receive mostly Civil funds. In the President’s FY 03 Budget, the Corps got largely what it wanted for R&D, and is now aligning research more strategically.

MG Griffin noted that the Coastal Engineering Research Board, functioning in the Corps since 1930, would receive \$8 million in the President’s Budget.

LTG Flowers concluded that the key to sustainable development is pushing the science.

7. IMPLEMENTING ENVIRONMENTAL SUSTAINABILITY IN CIVIL WORKS PROJECTS

Dr. Johnson gave a presentation, explaining how the Corps seeks balance and synergy among human development activities and natural systems. Sometimes in planning a project, he said, the Corps will develop separate plans to maximize National economic development and environmental benefits. This leads to side-by-side economic and environmental projects, such as Baltimore Harbor and Poplar Island, MD. In other cases, the Corps may do an interdependent plan, such as a flood control project that also provides some wetland protection, or a wetland protection project with incidental flood control. A more difficult approach, he said, involves trade-offs between economic and environmental benefits. The Corps’ Institute for Water Resources (IWR) is working with agencies and non-government organizations to develop systems to let the field know which models to use to evaluate projects using this approach.

LTG Flowers said the Corps is working to open the planning process earlier. After Oct. 1, 2002, the Corps will no longer be “customer/stakeholder/focused;” instead customers and stakeholders will be part of its team.

Dr. Johnson reported that IWR is developing the tools to evaluate environmental projects, where outputs often cannot be measured in dollar values. The Corps wants these tools to be user friendly and based on sound science. With these tools, the Corps will be better able to evaluate the tradeoffs of economic and environmental benefits. The Corps could even offer “empowerment options” to add environmental benefits to otherwise single purpose projects, if the costs are within a prescribed range. Commanders could add these benefits without USACE approval, “just do it.” He said HQUSACW would send a draft proposal for approaches to planning civil works projects to contribute to environmental sustainability to the EAB in June, host a workshop in New Orleans in July, and issue guidance in September 2002.

LTG Flowers stressed that this analysis would not add more time to the project formulation process, which has been criticized as “too long, too expensive.” Indeed, these tools may shorten the process.

MG Griffin noted that the Chief had met with the President’s Council on Environmental Quality (CEQ) on 9 April 2002 to discuss “legacy projects” which had been authorized but never built. The Chief outlined to CEQ a process to identify these projects and either reformulate them with a view toward sustainability, build or cancel them over the next two years. He cited Dr. Johnson’s work in involving Washington level interagency leaders in the Upper Mississippi restudy, saying he would like to apply this process to other

projects. The more talking the Corps does with its partners, especially those with expertise, the more likely it will be to achieve consensus.

8. UPPER MISSISSIPPI RIVER SUSTAINABILITY ISSUES

COL Bayles highlighted the EAB's visit to Rock Island District and tour of Mississippi River Lock & Dam 15 on 10 April 2002. Members of the UMR-IWS team and the U.S. Fish & Wildlife Service gave briefings on the Study to date, noting that while the Study began with an emphasis on navigation – reducing delays at locks – it has been reformulated under recommendations of the National Academy of Sciences (NAS) to include examination of the rivers as an ecosystem. A Principals Group from several agencies has been formed to oversee the Study, and they recommended equal consideration of the environment and navigation, a look at cumulative effects of development, and development of an economic model outside the study. The Study will focus on several scenarios to predict navigation traffic under various conditions. The day's meetings included time for more informal discussion among stakeholders, the District staff, and the EAB.

Ms. Wetherell recalled the discussion with stakeholder organizations and their tremendous involvement in the Study. She suggested, however, that the Study needed an “elected champion,” an elected official willing to commit the States to the Study. She recalled that she had worked with MG (then COL) Griffin on that basis when he commanded Mobile District. Also missing, she said, was commitment of top policy makers, even though there is a high level of involvement by the five affected States. The States and other stakeholders, she said, need to pull together on common interests and make an economic commitment, not just look to the Corps for a solution.

Dr. Hullar agreed that governors or their designees need to be involved. Overall, he said, the UMR-IWS is a “leadership project” for the corps, especially on environmental issues. The Study should have value not just for the region, but also as a model for similar multi-objective studies elsewhere. He warned that the decision to make ecosystem restoration equal to navigation is not well known. Cost sharing and single vs. multiple purpose authorizations are also issues – should cost sharing apply to “public goods” such as flyways for migratory birds that belong to the entire Nation?

LTG Flowers commented that the Corps is like a piñata – it's visible and takes a lot of hits, but eventually it opens up and everyone feels better because it was there.

He said that processes are fine, but wondered if at some point they preclude action. Government agencies are expected to deliver at some point, so how much process is enough? If the Corps, or any agency, allowed every stakeholder to optimize a project or process for its own ends, the result would be chaos. He said he saw the UMR-IWS as an opportunity to get parties together, but said the parties couldn't fully develop every scenario possible in the Study. An option would be to allow stakeholders to develop their own scenarios, but he had his doubts about that option. Another option would be to bring in neutral consultants. He asked for EAB advice on the UMR-IWS process, particularly on the concept of “elected champions.”

Ms. Wetherell recalled that in the Everglades, the Corps led a group of divergent interests to a conclusion. All successful collaborations, she said, depend on the personalities of those who lead the effort. On the Everglades, two Jacksonville District Engineers, COLs “Rock” Salt and Terry Rice, were especially skilled at consensus building. The Corps and the South Florida Water Management District (SFWMD), she said, put great effort into educating others, especially in the environmental community, on the issues surrounding Everglades restoration. That was crucial to bringing about a unanimous recommendation by 20 entities, with the State agreeing to fund activities it saw as critical. She said Congress could solve the cost sharing issue. The system used by the Corps seems workable, but the Corps won't be able to get the States on board until they feel ownership of a project.

LTG Flowers noted that Congress wants to expedite the UMR-IWS. Just repairing the system as it now exists can be expensive, and getting the States to take ownership will be a major issue.

Dr. Hullar recalled hearing several times during the UMR-IWS briefings that the Mississippi is “a Federal river,” and said the States are not paying attention to a river on their borders. Of the five State capitals involved, only one – St. Paul, MN – is on the river. The others – Madison, WI; Des Moines, IA; Springfield, IL and Jefferson City, MO – see it as something remote.

One possible way to gain involvement in the Study is the use of round tables, with “no leadership but the leadership of ideas” and no commitments, just listening. This is being used on the Great Lakes. Another is to invite experts to take part in the discussions – everyone loves to be invited, and a lunch or dinner isn’t too great a cost. But ultimately, he said, when one has a leadership role and authority, one should use it.

Dr. Donahue outlined the ingredients needed for a successful UMR-IWS:

1. A champion willing to “go to the wall” to support the study;
2. Someone in charge – “bottom up” consensus doesn’t work. On the Great Lakes there are lots of groups waiting for someone to make the first move.
3. An inclusive process with meaningful opportunities for participation, even by opponents;
4. Vision and a defined process; and
5. Transparency – open meetings and taking pains to keep people informed. He recalled the International Joint commission (IJC) has gone in the past 20 years from closed-door meetings to a “town hall” approach before settling on something in between.

Dr. Hullar recalled discussions of “adaptive management.” This requires monitoring over time – possibly 25 years or more. For universities, this is a problem; graduate students usually want research projects that will allow them to complete their dissertations in 3-5 years. Therefore, permanent agencies should do the monitoring. A place to start would be to get existing data out of “shoeboxes.”

Ms. Wetherell said most States are looking at adaptive management, struggling with ways they can collect and use data. Compliance data is especially difficult to obtain. The State can say how many inspections it has conducted, but has no data to say, for example, “as a result of these measures, water quality in Tampa Bay is this much better than it was three years ago.” Without such data, however, the State is hard pressed to show taxpayers what they get for \$1.4 billion a year spent on environmental programs. Metrics, she said, will support efforts to be adaptive, and thus to be sustainable.

LTG Flowers agreed – with metrics the public can understand what it is getting for its money.

Ms. Wetherell recalled that, in the 1990s, Florida decreased the number of environmental enforcement actions as it shifted its emphasis to helping permit holders comply with the law. For this, the State administration was criticized in the news media, but with metrics could show that it was achieving more actual results.

Dr. Hullar suggested that, in the UMR-IWS, there is a significant opportunity for Corps leadership in bringing EPA and other Federal partners together to decide how to allocate resources.

9. NEXT BOARD MEETING – LOCATION AND TOPICS

The Board reviewed several options for its next meeting, to be held in the Fall of 2002. Among them:

- The Everglades and South Florida;
- San Francisco, with visits to the Readiness Support Center and Formerly Used Defense Site (FUDS) work;
- Sacramento, with visits to the Hydrologic Engineering Center, the Sacramento-San Joaquin basin, Napa projects and the old Beall AFB;
- New England, with visits to the Cold Regions Research & Engineering Lab (CRREL), Boston’s Muddy River, and coastal projects;
- Wilmington, NC, with visits to the coastal research facility at Duck, NC; Oregon Inlet; and beneficial use sites;
- The Pacific Northwest, to study hydropower and fish issues.

Dr. Donahue said all these suggestions had merit, but suggested adding the Great Lakes for grand scale ecosystem restoration. Otherwise he would put the Everglades at the top of his list to talk about Corps potential for that kind of work.

Dr. Hullar agreed with the Everglades, followed by the Pacific Northwest with its endangered species issues. **Ms. Wetherell** said she would reverse that order and put the Northwest first.

Dr. Hullar said that, at an Everglades meeting, they could include experts in other types of restoration work, such as Superfund. **LTG Flowers** said the Corps and the Board could set the agenda however they liked. **Ms. Wetherell** suggested that a South Florida meeting would not be particularly expensive, as there are restoration experts already there. There was discussion of bringing in others now wrestling with large scale restoration elsewhere, such as in Coastal Louisiana, the Great Lakes, or San Francisco Bay. **LTG Flowers** suggested that a consensus was forming around a meeting in Florida in the Fall of 2002, followed by one in the Pacific Northwest in the Spring of 2003.

10. GENERAL DISCUSSION

Dr. Donahue reported that he was in Washington, DC the day before the Board meeting for a congressional hearing on a potential Water Resources Development Act (WRDA) of 2002. Reading through the testimony of a variety of groups, he said, he saw three themes that related to the Board's discussion:

1. Breadth of authority – Congress, he said, is the Corps biggest advocate, and wants the Corps to position itself as a leader in ecological restoration on a grand scale.
2. Peer review – A proposal was put forward by a witness at the hearing to reactivate the old Water Resources Council as a means to better coordinate interagency work at the Federal level. This appears to have some merit.
3. Cost sharing – Concern over cost-sharing practices and policies was a common theme, and a careful review and prospective recommendations may be warranted.

The EAB, he suggested, can tackle these issues and offer recommendations. The Board could orient future meetings to panel discussions on these issues and put together a briefing paper.

Dr. Hullar took up the theme of expanding authorization, saying environmental rehabilitation and ecosystems should be seen as a “core” Corps mission like navigation and flood control.

LTG Flowers pointed out that 20% of the Corps work is now environmental. Corps missions change with the public interests of their time, and now that interest is in environmental restoration.

Dr. Hullar agreed that Dr. Donahue's three issues are critical to the Corps, as is a fourth – dealing with a diversity of views. With regard to peer review, he said the Corps should get the Nation's top scientists involved for their perspective and knowledge – as happens routinely in academia.

LTG Flowers agreed peer review is important. The Corps, he said, is awaiting two NAS reports with recommendations on how to achieve it; one is due in July 2002 and the other in 2003. He reported his testimony before Congress, where he said the Corps is not afraid of peer review, but does not want it to add time or expense to the study process. Before the advent of cost sharing, the Corps had the Board of Engineers for Rivers and Harbors, which provided a pure peer review as part of the project formulation process. Districts and divisions would make every effort to be ready for tough questioning on their projects from this Board, which sent many projects back. This added time and expense to the process, however, so Congress did away with the Board. **LTG Flowers** said he would like to see a peer review mixing the Corps and the best minds in science and academia – that would provide value added. He warned, however, that a completely outside body, as is being recommended in some Corps reform proposals, would likely become politicized. Military leaders, he said, are “people with no dog in the fight.” He said he would welcome EAB's examining the peer review issue more.

Dr. Donahue agreed that a board of outside experts would become politicized, supported by parties with axes to grind. Bringing the process into the Corps with a mixture of inside and outside expertise, he said, would be a more promising approach.

Dr. Johnson said districts often hire outside experts to review their projects, or ask for review by other districts or divisions.

MG Griffin pointed out that a public comment period, usually 45-60 days, is also part of the process, and outside experts are free to offer comments during those periods.

LTG Flowers said there is a problem that the Corps puts out such a volume for public comment; few people have time to go through it. Putting project summaries on a web site may be helpful. He asked Dr. Johnson and Ms. Rivers to develop a package for the EAB on the peer review and public comment processes.

LTG Flowers said there were proposals under consideration for inclusion in a WRDA '02 for the Corps to do comprehensive watershed planning. These proposals are not yet fully developed, but should be helped by the pending NAS reports.

LTG Flowers called for EAB input on the idea of a Federal Principals Review Panel, with senior officials of the Departments of the Army, Interior, Transportation, EPA and others to examine “legacy projects and look at reformulating them.

Dr. Donahue asked how many there were. **LTG Flowers** said he didn’t know, but he could think of 15-25 off the top of his head.

Dr. Johnson said that the Principals Group guiding the UMR-IWS is an excellent example of cooperation, putting personal and agency views aside for the greater good.

Dr. Hullar said the Principals Group and the review of legacy projects were both good ideas.

Dr. Donahue asked what constitutes a “legacy project.”

MG Griffin said they include projects on “hold” for a number of years, such as one at Fire Island, NY, on hold for 40 years due to differences between the Corps and the Department of Interior. In many cases, public priorities on these projects have changed to the point where it may be right not to build them, but there is no way to reach such a decision under current procedures. He suggested that the Principals Group process could also be applied to upcoming projects such as those in Coastal Louisiana.

Dr. Johnson said old projects are often constrained by old authorities. They can be modified like the UMR-IWS process was.

LTG Flowers said the idea of examining legacy projects needs to be talked through, but he would like to see it concluded in a timely manner to move projects that need moving, modify others to meet current needs, and take the others off the books.

11. PUBLIC COMMENT

Chris Neeld, Upper Mississippi, Illinois and Missouri Rivers Association (UMIMRA), called the Board’s attention to the work of drainage districts in the Upper Mississippi region since 1906. They protect farms in high water, and keep pollution out of the rivers during low water. Levee backsides, he said, are good places to put dredged material. Drainage ditches provide habitat – low water marshes and timberland. Their lakes provide feeding areas for waterfowl, as do farms after the harvest. All this is at no expense to the taxpayer. He urged the Board and the Corps not to do away with drainage districts, but to make a good thing better, and called for placement of more riprap along the riverbanks.

Mark Beorkrem, Mississippi River Basin Alliance, said his group tracks Corps activities in the Basin for the environmental community. He thanked the Board for coming to the Midwest, and Rock Island District for fixing the shortcomings of the old UMR-IWS and working with stakeholders; he has met with the study group dozens of times.

The Upper Mississippi Basin, he pointed out, has an immense flood plain of 2.5 million acres. Its political situation is different from that of the Everglades in that there are multiple States involved.

The environmental community, he said, is seeking to re-establish balance. Since the 1880s, navigation work on the Upper Mississippi has come to \$5.4 billion in today’s dollars. The Environmental Management Program, on the other hand, has only received \$226 million. Environmentalists don’t want to take the Basin back to pre-settlement days, but want to address issues that have been overlooked in the past. They seek win-win solutions, and would like to see a plan that would make the Basin an environmental showcase as well as an agricultural and economic one.

Some issues the UMR-IWS is dealing with, he said, are also vexing in other areas. The Ohio River has cost sharing issues, and the Missouri River has the Master Manual issue. He suggested there may be foundation money available to deal with environmental issues, and commended the proposal to examine legacy projects. He suggested it include other old plans, such as those for New Madrid, MO.

He pointed to an Engineer Regulation from 1995 as an outstanding source for how to do environmental analysis, but said the Corps needs to use it for more than chemical analysis.

He suggested the EAB meet more than twice a year, and meet with stakeholders such as leaders of national “green groups.” He also suggested Dr. Johnson meet with these leaders to gain their buy-in to the concept of environmental sustainability. **LTG Flowers** said he would be happy to meet with these leaders, and asked for an invitation.

David McMurray, UMIMRA, noted that only half of the 2.6 million acres in the Upper Mississippi flood plain are protected by levees. Under cost sharing, rural areas can’t afford protection the way cities can. This leads to a problem where the Federal government takes care of city levees, but not agricultural ones. This, he suggested, was similar to saying, “we’ll build highways in Denver and Chicago, but not in between.”

He said the idea of an EAB is good, as is environmental restoration, but economic development is important, too. Economic meetings discuss environmental issues, he said, and asked why environmental meetings can’t discuss economic issues, too. The river has numerous issues – navigation, flood control, recreation, and agriculture as well as environment. He liked the term “built environment” he heard earlier in the meeting.

He appreciates the Federal role, but draws the line at letting the Federal government say how private property should be managed. Most people living on the river, he said, expect to be asked about government decisions affecting them. Many of those people can’t afford take time from work and come to meetings such as this one, where most people present are paid by someone to be there.

He recognized that the Corps is a leader, but said it is also a servant of the Administration and Congress, and has an additional problem in that its leadership is transient. Still, he said the Corps should be a leader; the question is how should it lead?

He suggested the UMR-IWS gets bogged down over concerns that it will set a precedent for elsewhere. The Mississippi River Commission, he suggested, can serve as a clearinghouse for issues.

On the Missouri River, he said, one engineer in his organization looked at the flood plain and found \$1 billion in infrastructure needing protection.

LTG Flowers addressed the comment about the transitory nature of Corps leadership, saying it is related to the question of why the Corps is in the Army. The answer, he said, is in history. Continuity is found in the Corps civilian staff and the processes they carry out. Military people offer fresh ideas and impartiality.

Paul Rohde, Midwest Area Rivers Coalition (MARC) 2000, said he appreciated economic issues being mentioned by the previous speaker. He was also at the WRDA 2002 hearing, and heard a Department of Transportation estimate that waterborne commerce would double by 2020, but travel on antiquated systems. With more efficient water transportation, he said, the economy will win, but so will the environment through less use of more polluting alternatives such as rail and truck transportation. With more delays, on the other hand, shippers will seek other modes, leading to more accidents and fatalities. Ultimately, inefficient transportation in the U.S. will lead other countries to put their virgin lands into production to take a share of the world grain market.

He would like to see the discussion of environmental and economic issues turned from mutual exclusivity to multiple objectives, and a viable source of funds for environmental benefits similar to the Inland Waterway Trust Fund for navigation. He sees “Corps reform” as another diversion.

Dr. Donahue asked if there were studies demonstrating the environmental benefits of navigation in comparison to other transportation modes. **Mr. Rohde** said there had been several, and offered to find them for the Board.

12. REMAINING ITEMS

Dr. Johnson reported that the Corps would arrange a series of regional environmental sustainability workshops with other agencies. He provided the Board a list of Corps centers of expertise.

MG Griffin sent a letter to division commanders regarding the use of labs and academic institutions in projects.

With regard to the Yazoo Basin project visited by the Board at its last meeting, he said issues of land acquisition remain.

13. CLOSING COMMENTS

Dr. Hullar thanked the Chief of Engineers for holding meetings in places that exemplify issues the EAB deals with.

Dr. Donahue reiterated that the laboratories are the Corps' best-kept secret, and need to be more visible. He suggested site visits to show the diverse types of projects the Corps carries out.

LTG Flowers said the Corps is committed to serving the public, using the best engineering and science available, in as efficient and thorough a manner as it can. With people like the EAB grading its paper, it will succeed.

14. The meeting was adjourned at 1320 hours.

Certified 2 August 2002
Ellen M. Cummings
Executive Secretary